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A Brief Introduction to Editing with Final Cut Express

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This document provides a brief introduction to editing with Final Cut Express 4. At this point this document is a rough work-in-progress, please provide feedback on how it can evolve into a more useful document, especially in terms of what's missing and what you find confusing.

This is a very incomplete work-in-progress. Your feedback would be greatly appreciated as this document evolves towards something more complete and useful. Please send comments, suggestions, and corrections, to: David Tamés via email to david.tames@massart.edu or call 617.879.7298.

What is Final Cut Express?

Apple bundles iMovie with every new Macintosh, providing easy-to-use video editing for everyone. Some media makers, however, require the creative flexibility provided by a traditional timeline-based non-linear editing application. This is where Final Cut Express 4 comes in. Reasonably priced (compared to Final Cut Pro 6, only available as part of the Final Cut Studio 2 bundle), Final Cut Express is sophisticated enough for doing pro-level work, flexible enough for demanding artists, yet basic enough for those who are new to editing.

The most noticeable differences between Final Cut Express and Final Cut Pro is that Express is limited to working with three codecs: DV, HDV, and AVCHD. It also has several other limitations in terms of effects, filters, and levels of undo, however, for editors who are starting out, Final Cut Express provides a rich set of capabilities. If in the future you need the power and flexibility of Final Cut Pro, the upgrade experience will be relatively seamless since the Final Cut Express interface is for the most part identical to the Final Cut Pro interface. In addition, Final Cut Pro can import Final Cut Express projects, however, there is no going back from Final Cut Pro to Final Cut Express.

Getting Started

Final Cut Express, like most sophisticated video editing applications, carries a fairly steep learning curve for new users, however, if you focus on the fundamentals, you can get started and get a lot done in just a few steps. This document is designed to take you step by step though your first experience with Final Cut Express and will also provide some suggestions for further study.

Storage volume

You must use an external FireWire hard drive to store your project files and related media files. Keep in mind that the computers in the Studio Foundation labs are not backed up, therefore, it's very important that you save both your project folder and your scratch folder on your own external hard drive.

Having your own external FireWire hard drive is a requirement for Visual Language II classes

The MassArt Supply and Book store carries LaCie Rugged hard drives with FireWire 800, FireWire 400 and USB 2.0 interfaces for universal connectivity.

The drive is bus-powered and plug & play, ideal for video storage and data exchange on the go. While all hard drives are delicate electro-mechanical devices and should be treated as such, the aluminum shell and shock-resistant rubber bumper offers extra protection. There are two flavors of the drives, 5400rpm and 7200rpm (which refers to how fast the internal disk platters spin). The faster 7200rpm drives are highly recommended for video editing.

Gather your media

If you are going to learn Final Cut Express using your own media, you should have some video that was recorded with audio on a mini-DV tape ready to be captured. Or better yet, it may already be captured to a DV or HDV QuickTime file. Audio files should be in the AIFF (.aif) or WAV (.wav) format, and it will be useful to have a couple of still images in .psd, .tif, or .jpg format to work with.

Create a folder for your project

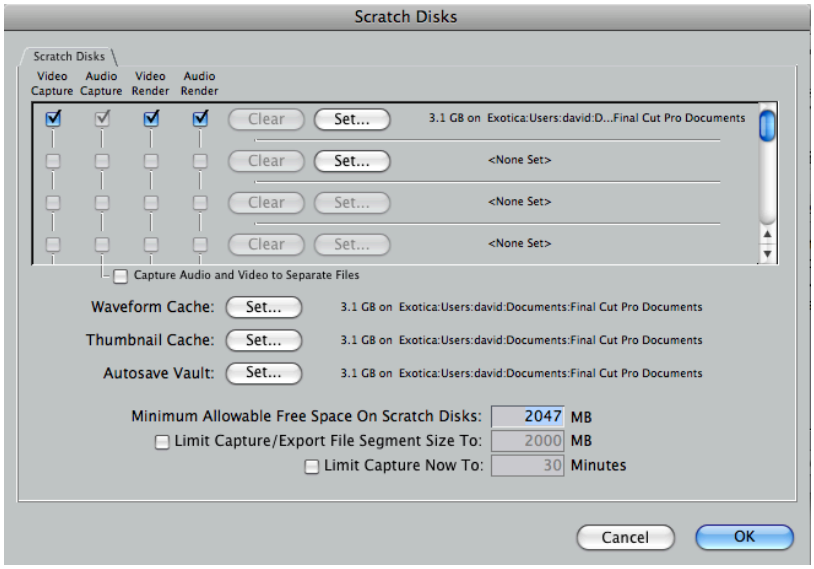
It's important to have a place to store your Final Cut Express project file and other related files like audio clips, images, music, etc. This could simply be a folder on your external hard drive. This is not the same place, however, that media will be stored when captured from your camera. That place is determined by the

Scratch Disk setting (System Settings from the Final Cut Express menu). This will be described again in the next section.

Remember, you project file keeps track of what goes where and how things are arranged, but it does not contain the actual media. That's what lives in the Capture Scratch folder. And the location of 'Capture Scratch' is determined by System Settings. Yea, Final Cut Express media management is a little complicated at first. Hang in there.

Set system settings

Setting scratch disk(s) is done in order to tell Final Cut where to store certain files. For instance, when you capture video, you can set Final Cut Express to store the raw clips in a certain location. To view scratch disk settings, choose **Final Cut Express > System Settings.** Final Cut Express, by default, stores captured media in a folder called 'Capture Scratch' in a folder called 'Final Cut Express Documents' in your user document folder, which you can change with this setting window. The location of this folder is determined by the System Settings. Since you're working in a shared laboratory environment, you should change the system settings to point to a folder on your external hard drive. Set this to point to your project folder. You will then see Final Cut Express create folders with names like "Capture Scratch" and "Render Files" in the folder you specify.



Always check System Settings when you first launch Final Cut Express and make sure you know what this is set to. Choose **Final Cut Pro > System Settings** If the settings map 'Capture Scratch' to a disk volume (this is determined by the volume associated with the check boxes for Video Capture and Audio Capture) then it will exist at the top level of that file volume rather than the 'Final Cut Express Documents' folder or a project folder you designate.

Notice that there are scratch disks for video, audio and render files, waveform cache, thumbnail cache, and auto save vault. By default, these are set to the 'Final Cut Pro Documents' folder in your Documents folder (created when the program is installed), within which the program creates a separate folder for each of the scratch disk items. Eliminating scratch disk materials (i.e., captured files in the Capture Scratch folder) in a project will cause Final Cut to not to be able to find them, resulting in loss of data. Never remove scratch disk materials until you are finished with your project, and then, you might want to back up the media.

Before starting work always make sure that the Scratch Disk Settings are set to point to your external hard drive. If the scratch disk settings are pointing to the internal hard drive and you capture video, all of the video might be lost since who knows what can happen on a lab machine. Get into the habit of checking these settings every time you start up Final Cut Express, otherwise, you may lose critical data.

Be really careful not work on your project before checking the System Settings if you share a workstation with other people, or use it for multiple projects in which you are putting different projects on different hard drives. You want to make sure everything you capture ends up in the right capture scratch folder.

Set user preferences

Final Cut Express lets you adjust many of the things it does and how it does them. One preference you will want to change right away is the time between "autosaves" as well as the level of undos. Check it out now.

Starting a new project

When you launch Final Cut, a new project will be created. Before you do anything

else, save it (**File > Save Project As**) in the folder you have chosen as your project folder. Or, if another user's project opens (Final Cut remembers the last thing you were working on), choose **File > Close Project**, then choose **File > New Project** and then save it in your folder.

A/V settings

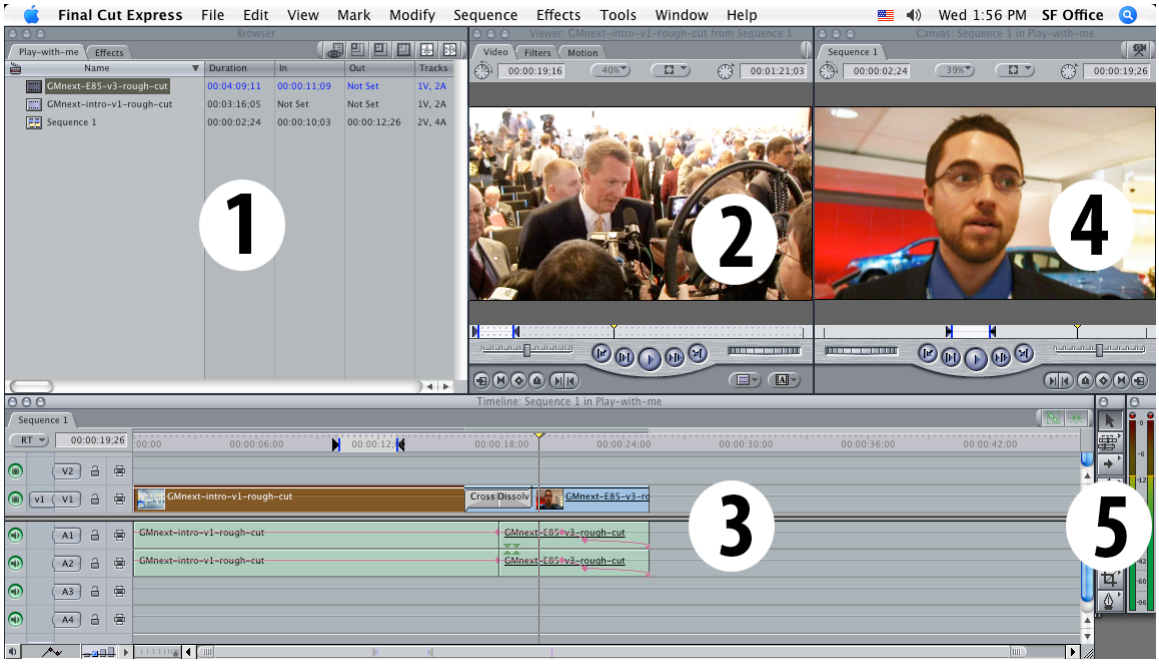
Make sure you're working with the right Audio/Video settings. Go to **Final Cut Pro > Audio/Video Settings** and choose 'DV NTSC 48KHz' if you're working with the non-wide screen DV cameras, or 'DV NTSC 48KHz Anamorphic' if you're working with wide screen DV cameras.

Save your project

When you launch Final Cut, a new project will be created. Before you do anything else, save it (**File > Save Project As**) in your folder. Or, if another user's project opens (Final Cut remembers the last thing you were working on), choose **File > Close Project** from the menu, then choose **File > New Project** and then save it in your folder. Since you're working in a shared laboratory setting, remember to place your project folder on your external hard drive. Anything saved to your user folder on the internal hard drive of the laboratory computers is here today may be gone tomorrow.

The Final Cut Express Interface

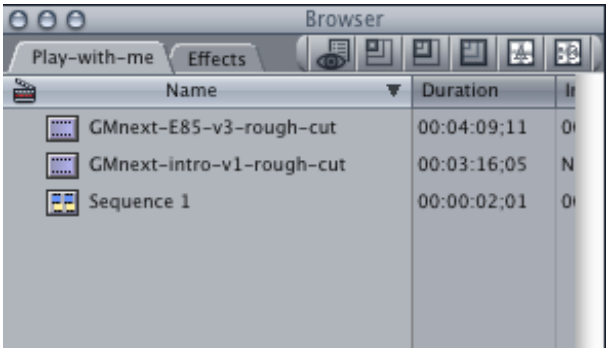
The Final Cut Express user interface contains several application windows. The picture below illustrates each area of the interface, under which we will describe the function of each. If your windows are not arranged as show, you can reset the window settings to their default by choosing **Window > Arrange > Standard** from the menu.



1. Browser - As you capture or import video, audio clips, images, references to the actual files on your hard disk appear in the Browser as clips. To open a clip in the Viewer, double-click it.

2. Viewer - This is a window for scrubbing, playing and editing clips. Double-click a clip in the Browser or the Timeline to open it in the Viewer. Common tasks here include setting in and out points, editing sound levels, and adjusting effects or filters. Notice the playhead for scrubbing back and forth is located directly above the playback controls—to move it, click and drag. Keep in mind that if the playback line below the image has dotted lines, you're looking at the version of the clip that is in the timeline, not the original clip. Once you start editing, you'll see the difference.

3. Timeline - This window displays your sequences. To put a clip on the timeline, simply drag and drop from the Browser or the Viewer. To play clips in the Timeline, use the space bar on the keyboard to start and stop, or click the 'play' icon on the Canvas window. The 'Home' key will take you back to the start of the sequence. Notice the playhead for scrubbing back and forth can be moved by clicking and dragging on its top or in the Canvas window.



4. Canvas - this provides a preview of your Timeline. Notice the playback controls (you can also use the space bar on the keyboard to start and stop playback, along with J (play-reverse), K (pause), L (play-forward). Notice the playhead for scrubbing back and forth is located directly above the playback controls, to move it, click and drag. You need to have a sequence open before something appears in the Canvas.

5. Tool Palette and Audio Meters- this is your palette of editing tools. Contained here is the pointer tool (shortcut 'a' and selected by default); selection tools; roll and slip tools; razor blade (shortcut 'b'); crop and distort; zoom; and, pen tools. An audio level meter is located next to the Tool palette.

IMPORTANT: Depending on which tool you select in the Tool Palette, Final Cut will behave differently. This is what's called a **modal interface**. It does different things depending on what mode you are in. If Final Cut is ever not doing something you expect, or doing something you don't expect, check to see what tool is selected in the Tool Palette. You can always "reset" back to the Arrow Tool by clicking on the Arrow Tool in the Tool Palette or by using the short cut 'a' (for arrow).

Program windows in Final Cut Pro can be shown or hidden using the 'Window' menu. In addition, you can move and resize them as you wish.

Capturing Video and Importing Media Files

To begin capturing video in Final Cut Express, choose **File > Log and Capture** from the menu. The Log and Capture dialog appears. Specific capture settings can be set using the Capture Settings and Clip Settings tabs, while the Logging provides spaces for entering info about a particular clip.

Why would you want to edit any of this info? Well, if you're capturing video directly from a MiniDV tape via a FireWire cable connected to one of the standard 4:3 aspect ratio Studio Foundation digital cameras, then you'll want to make sure your Capture Settings read:

- Device Control: 'FireWire NTSC'
- Capture/Input: 'DV NTSC 48 kHz'

Otherwise, if you are connected to one of the wide-screen 16:9 aspect ratio Studio Foundation digital cameras, then you'll want to make sure your Capture Settings read:

- Device Control: 'FireWire NTSC'
- Capture/Input: 'DV NTSC 48 kHz Anamorphic"

Clip Settings can be used to specify whether to capture both audio and video, or either one by itself. In addition, there are several formats for capturing audio. Most editors choose 'Ch. 1 + Ch. 2' so that each side of the stereo field is recorded to a discrete channel.

Capturing video

Begin playback of your tape (either via device control in the Log and Capture dialog or directly on your camera or VTR) and click the 'Now' button (lower right of the dialog) to begin to capturing. To stop, press the 'esc' key on the keyboard. Repeat this process for each clip you need to capture. Media is captured to files using the name you enter in this window to a folder called "Capture Scratch." The location of "Capture Scratch" is determined by your System Settings. Keep in mind if you don't give them a name in the Log and Capture window, they will be called "Untitled 1", "Untitled 2"

Make sure you make a backup of your Project File as well as any files that you don't capture from tape. In the event of a hard drive failure, if you have a good backup, you will be able to recover your project by bringing your Project File back from the backup, along with related files that were not captured from tape. Then you can have Final Cut Express recapture the video from your videotapes. Refer to the FInal Cut Express Reference Manual for details in event you need to recapture a project).

etc. Give them a name, this way you know what the media files are when you look at them on the disk.

Importing Files

If you already have video clips, audio files, graphics, etc., you want to use in your project, you can bring them into Final Cut by choosing **File > Import**. Browse to the location of your files and click 'Import.' Momentarily, they appear in the browser. It's important to remember that Final Cut doesn't make a copy of imported clips, it links to its location on your hard drive. Therefore, it's a good idea to copy all clips you're planning to import to a project into your project folder. Video clips that have already been compressed will require rendering before they can be viewed. Further, you might experience some quality loss due to the clip's previous compression.

Editing

Once you have clips imported and/or captured, you are ready to do some editing.

The Browser

Note the browser differentiates between clips and sequences using different icons. You can also create "bins" (folders in computer parlance) which in turn can hold other bins, clips, or sequences. You can see the display in the browser as large icons or as a listing. You can change the appearance of the browser by using the little icons on the upper right hand side (FCE) or right-click on the browser and choose one of the view options from the pop-up menu. Bins are good for organizing your project, a bin for audio, a bin for b-roll, a bin for images, etc. Choose **File > New > Bin** to create a new bin.

Viewing Clips

By double-clicking a clip in the Browser window, it will appear in the Viewer. Drag on the playhead to scrub on a clip, use the playback controls, or press the arrow keys to move frame by frame.

Click the Mark In/Mark Out buttons to add in/out points. Or use the short-cut keys 'i' and 'o' respectively. Once inserted, you can drag to adjust them on the viewer. By clicking the 'Motion' tab in the window, you can adjust properties such as size, center point, opacity, etc. To refresh the clip, click on the 'Video' tab.

When ready to move a clip onto the Timeline, simply drag and drop it from the Viewer to the Timeline. You'll notice that while you are dragging the clip onto the timeline, Final Cut will change the pointer to either a down-pointing arrow or a right-pointing arrow.

The down-arrow indicates that the clip will be inserted directly into whatever other contents are present, this is know as an **overwrite edit**. On the other hand, the right-pointing arrow indicates an i**nsert edit**, which causes the clips beyond the insertion point to be offset from the current position. Experiment with this, the best way to get a feel for the interface is to drive it and do some experimentation.

Working in the Timeline

Since we're getting started, we'll focus on a basic set of tools, and then add more tools to our toolkit later on. You will find there are other ways to get clips into the timeline (three point editing) but we'll bypass that for now. There are many tools available for manipulating video and audio in the timeline, and we'll bypass most those for now as well.

For now, choose two clips to work with, open them in the Viewer, set in and out points, and then drag them to the timeline. Practice doing the following with the clips:

- using the default pointer tool (shortcut 'a') change the in and out by dragging the start and and end of the clips,
- using the razor blade tool (shortcut 'b')
- note that by default, video and audio tracks within a clip are 'linked' together. to unlink them, select the clip with the pointer tool and then choose **Modify > Link**, (shortcut '⌘L') which will either unlink linked items or link unlined items. Note that even after unlinking video from audio, that the two audio tracks travel together. This happens when they are a stereo pair, you can change this by choosing

Modify > Stereo Pair (shortcut '⌥L') which will either unlink an existing stereo pair or link together as a stereo pair two independent audio clips.

- If you want to close the gap between two clips, choose **Sequence > Close Gap** (shortcut '^G')

Adding Filters

To add a filter or transition to a clip, double-click to choose it and then browse to the filter by going to **Effects > Video Filters** or **Effects > Video Transitions.** Notice the different categories of video filters and transitions. Try adding a cross-dissolve between two video clips. Most filters require that the clips being manipulated be rendered (shortcut '⌘R' or choose **Sequence > Render**) prior to playback, depending on the speed of your computer.

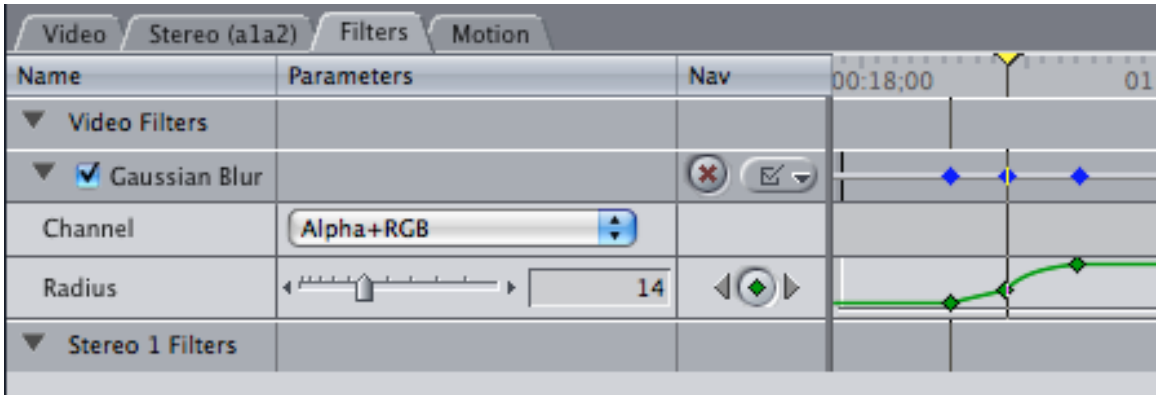
Three Point Editing

Experienced video editor like to use a quick way to insert or replace clips in the Final Cut Pro timeline without the hassle of moving, removing, etc., other clips like we've been doing with click, drag, pointing, resizing, and cutting with the razor blade. The way you do this is to set three out of four of the two in/out points on the source clip and in/out point on the Timeline. Then drag a clip from the Browser to the Canvas window. A colorful pop-up clip tool appears giving you some choices of what to do.

Use this in tandem with the playhead on the Timeline or in and out points on the Timeline to insert a clip between two others, overwrite or replace a selected clip in the Timeline, superimpose clips, or perform a fit-to-fill in an empty area between clips. Experiment with this to get a feel for it. Some people prefer the click-drag-cut-resize approach (which is like the good old days of splicing film and the tactile experience that goes with that) others prefer this approach. Final Cut let's you work either way.

The Wireframe

You can enable the Wireframe in either the Viewer or the Canvas windows by clicking on the wireframe icon on the top right. The wireframe provides a graphic way to move, re-size, crop and rotate clips.



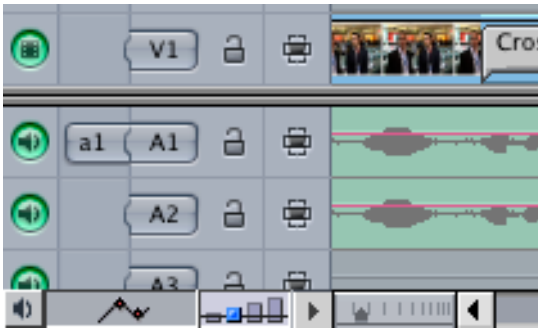
Keyframes

Suppose you wanted to create an effect in which a filter was gradually applied to a clip over a certain period of time. How would you do it? With keyframing. For example, suppose you wanted to apply a blur filter and, over the course of five seconds, transform an image from crisp to blurry.

First, double-click to select the clip (in the Timeline or Browser) and apply the filter by choosing **Effects > Video Filters > Blur> Soft Focus**. Then, click the Filter tab in the Viewer to reveal the filter's control panel. Notice the button directly next to the Radius slider.

In the Timeline, move your playhead to the start of the clip (make sure snapping is enabled). Then, back up in the Viewer, click the Insert/Delete Keyframe button (looks like a little diamond). A dot appears in the Filters tab -- the is the keyframe. Move the amount slider down to '0.' Then, back in the Timeline, move the playhead to the very end of the clip, and add another Keyframe. Move the Amount slider back up to 100.

Playback the portion of the Timeline containing the image, and you should see the image gradually change from sharp to blurry. Many facets of Final Cut can be keyframed, filters, motion, etc.



Working with Keyframes from the Timeline

On the Final Cut Timeline, notice the series of buttons located in the lower-left corner of the Timeline window (see illustration on the left).

These can be used to enlarge the Timeline and show/hide items such as keyframes. This can be handy for making minor keyframe adjustments, as the user can simply perform edits in the Timeline instead of using the clip editor.

Working with Audio

One of the best reasons for using Final Cut instead of iMovie is the flexibility with which you can work with audio. When you double-click on a audio clip that's in the Timeline, it appears in the Viewer. Here you can keyframe the audio, much in the same way you can in the Timeline, but for subtle changes it's easier to work in this window.

Also experiment with the Pan, for mono tracks, this determines where in the stereo field (from Left to Right) the sound is placed.

Adding volume changes

Using the Pen tool, you can add, move, and delete keyframes for fading audio up or down.

Here's how you do it, assuming we're starting with a sound clip in the sequence:

1. Double click on the audio clip, it will appear in the viewer

2. Select the pen tool.

3. Click on four or five points where you want to change the audio level. The round circles along the pink level like are called control points.

4. Click and drag the control points up or down to raise or lower the level (see illustration on this page).

5. Listen to the clip and adjust the control points as needed. To add additional control points, click on the line with the pen tool. Note that the pen tool has multiple modes: you can select the + mode to add control points and the - mode to delete control points.

Resources

This introduction only scratches the surface of editing with Final Cut Express. There is no better teacher than hands-on experience and practice. The following books and web sites will provide you with guidance to help you get the most from your time exploring the art and craft of editing, as well as dealing with Final Cut Express specific issues.

Documentation

Final Cut Express Quick Reference (given out in class and available for download from sf.massart.edu)

Final Cut Express Reference Manual (available on all Studio Foundation Macs with Final Cut Express installed)

Books

Weyland, Diana. *Final Cut Express 4: Movie Making For Everyone,* Apple Pro Training Series, Peachpit Press, 2008.

This book provides a good introduction to editing techniques with Final Cut Express 4. The book consists of a series of hands-on lessons, about 20 hours worth, with all the files you need on a DVD. The lessons cover capture, editing, transitions, compositing, audio, titles, speed effects, motion effects, and color-correction. Several copies of this book are available for same-day check-out from the cage.

Wohl, Michael. *Editing Techniques with Final Cut Pro,* second edition, Peachpit Press, 2003.

Used copies of the second edition are pretty easy to find at a good price. What I like about this book, unlike most of the other training books on editing, is it combines both practical Final Cut instruction with the craft of editing from a practical perspective. Even though you're editing with Final Cut Express, everything in this book is relevant.

Wohl, Michael. *The Craft of Editing with Final Cut Pro: A Comprehensive Curriculum for Video Editing Technique,* Apple Pro Training Series, Peachpit Press, 2008.

Once you've mastered the basics, this book provides a good tutorial for taking your video editing technique to the next level. The book covers techniques for editing dialogue, action, documentaries, comedy, music videos, multi-camera, and more. Includes two DVDs chock full of footage and project files so you have a variety of material to work with.

Web Sites

Apple Final Cut Express Support Page
http://www.info.apple.com/usen/finalcutexpress/

Apple Final Cut Express Discussion Forum
http://discussions.apple.com/forum.jspa?forumID=936

DVinfo.net Nonlinear editing on the Mac forum
http://dvinfo.net/conf/forumdisplay.php?f=30

Fine Print

Colophon

This document was produced on a MacBook Pro using Pages and set in Adobe Myriad Pro, Adobe Caslon Pro, and Linotype Mac Key Caps Pi. Music listened to while writing included the oeuvres of The Talking Heads, Brian Eno, Philip Glass, Yo La Tengo, Colin Owens, and Tangerine Dream.

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